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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,417	09/11/2003	Calvin T. Candland	21906US	5810

23430 7590 02/12/2004

GEORGE A LEONE, SR
2150 128TH AVENUE, NW
MINNEAPOLIS, MN 55448

EXAMINER

SEMUNEGUS, LULIT

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,447

Applicant(s)

CANDLAND ET AL

Examiner

Lulit Semunegus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9/11/2003. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "cannellure" in claims 1-20 is unclear to its meaning and indefinite because the term does not exist and the specification does not clearly define the term.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-6, 12, 13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Campoli (4,444,113).

In regards to claims 1, 3, 12, 13 and 19, Campoli teaches a self-sealing obturator (22) for sealing between a projectile (12) and a gun tube having a smooth gun bore (col. 2, lines 58-59), the obturator (22) comprising: at least one gun tube side (58); at least one projectile side (30) located opposite to the at least one gun tube side (fig. 1), where the at least one gun tube side is conformed to seal around the projectile (fig. 1); a tail

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protruding from a rearward end of the at least one gun tube side (54), where the tail makes contact with the bore to make a low pressure seal and is thinner than the rest of the obturator (fig. 1); and wherein the projectile comprises a sabot (20).

In regards to claim 4, Campoli teaches at least one projectile side comprises a first set (26) that contact a first surface (28) of the projectile, and a second set (30) that contact a second surface (32) of the projectile, where the second surface has a different circumference from the first surface so as to be offset from the first surface so as to provide a redundant seal (fig. 1).

In regards to claim 5, Campoli teaches the obturator slides along the surface of the projectile, as the obturator contacts the smooth gun bore, where an interference fit exists between the obturator and the projectile such that the obturator serves as retaining ring around the projectile (col. 2, lines 53-62).

In regards to claim 6, Campoli teaches the obturator comprises a wedge that fits a wedge- shaped gap (col. 3, lines 14-16) between the projectile and the smooth gun bore (fig. 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 10, 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campoli (4,444,113) in view of Altenau et al (6,237,497). Campoli

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teaches all the limitations of claims 2, 10, 11 and 20 except the obturator comprising of nylon or having a thickness of .25 inches. Altenau et al teaches an obturator (9) comprising of nylon (col. 2, lines 30-32). At the time of the invention, it would have been obvious to one ordinarily skilled in the art to have the obturator made out of nylon for more flexibility and tight interference between the gun bore and the projectile.

Furthermore, at the time of the invention it would have been obvious to have obturator having any thickness since applicant has not disclosed that having a certain thickness obturator solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with obturator with any thickness as long as there is sufficient sealing.

7. Claims 7-9, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campoli (4,444,113) in view of applicant's own disclosure. Campoli teaches all the limitations of claims 8 and 9 except the wedge angle being between 10-40 degree or less than 10 degrees or the obturator having different size caliber.

Applicant's own disclosure teaches the obturator typically has a wedge angle of 30 degrees (page 7, line 18-19). At the time of the invention it would have been obvious to have the wedge at any angle since applicant has not disclosed that having the wedge angle between 10-40 degrees or less than 10 degrees or the obturator having different size caliber solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the wedge angle greater than 0.

8. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campoli (4,444,113) in view of Gotz et al (4,520,731). Campoli teaches all the

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limitations of claims 16-18 except the obturator comprising an injection molded part or an extruded and machined part. Gotz et al teaches an obturator comprising an injection-molded part (col. 2, lines 9-21). At the time of the invention, it would have been obvious to one ordinarily skilled in the art to have an injection molded or machined obturator since applicant has not disclosed that having an injection molded or machined part solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with an injection molded or machined obturator.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Forster et al (H167) teaches an obturator (50) for sealing between a projectile (14) and a gun tube (10) having a smooth gun bore, the obturator (50) comprising: at least one gun tube side (11); at least one projectile side (fig. 1) located opposite to the at least one gun tube side (fig. 1), where the at least one gun tube side is conformed to seal around the projectile (fig. 3-4).

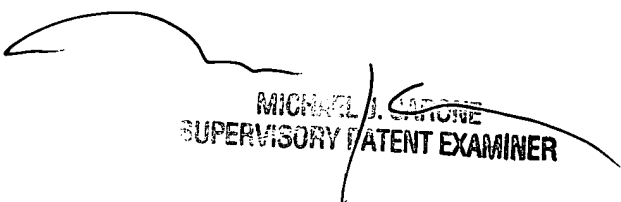
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lulit Semunegus whose telephone number is (703) 306-5960. The examiner can normally be reached on Mon-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Lulit Semunegus
Examiner
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MICHAEL J. CATONE
SUPERVISORY PATENT EXAMINER